The Levenson Self-Report Psychopathy Scale

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The Levenson Self-Report Psychopathy Scale

An Examination of the Personality Traits and Disorders Associated With the LSRP Factors

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There are several self-report measures of psychopathy, most of which use a two-factor structure. There is debate regarding the convergence of these factors, particularly with regard to Factor 1 (F1), which is related to the interpersonal and affective aspects of psychopathy; Factor 2 (F2) is related to the social deviance associated with psychopathy. This study examines the relations between the Levenson Self-Report Psychopathy (LSRP) factors and personality traits and disorders (PDs) in an undergraduate sample (n = 271). LSRP Factor 1 is related to an antagonistic interpersonal style (i.e., low Agreeableness; high Narcissistic PD and ratings of prototypical psychopathy), whereas Factor 2 is more strongly related to negative emotionality (i.e., Neuroticism), disinhibition (i.e., low Conscientiousness) and a broad array of PD symptoms. The authors interpret these findings in the context of alternative measures of psychopathy and suggest that the LSRP is a reasonable, albeit imperfect, measure of psychopathy.

Keywords: psychopathy; Levenson Self-Report Psychopathy Scale; assessment; self-report

Despite being omitted from recent versions of the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.) (*DSM-IV*; American Psychiatric Association, 1994), psychopathy is one of the most empirically validated personality disorders (PDs). The current conceptualization, influenced by Cleckley (1941) and Hare (1991), includes personality traits such as manipulativeness, egocentricity, a lack of remorse or empathy, impulsivity, as well as a pervasive involvement in criminal behavior (cf. Cooke & Michie, 2001). Psychopathy is related to criminality and aggression in adults (e.g., Porter, Birt, & Boer, 2001) and juveniles (e.g., Gretton, Hare, & Catchpole, 2004).

The Psychopathy Checklist (PCL) and its revision (PCL-R) are the most commonly used measures of psychopathy among incarcerated offenders. Until recently (see Cooke & Michie, 2001), PCL/PCL-R

psychopathy was thought to be composed of two factors that were correlated at approximately .50 (Hare, 1991).[1] Factor 1 (F1) is related to the interpersonal and affective components of psychopathy (e.g., grandiosity, lying, lack of remorse or guilt), whereas Factor 2 (F2) comprises traits and behaviors indicative of "social deviance" (e.g., early behavior problems, juvenile delinquency, and impulsivity; Hare, 1991). The PCL/PCL-R factors typically manifest different patterns of relations with external criteria. For instance, F1 has been unrelated or negatively associated with psychological distress and anxiety (Harpur, Hare, & Hakstian, 1989; Schmitt & Newman, 1999) and positively associated with social dominance (Harpur et al., 1989) and emotional detachment (Patrick, Bradley, & Lang, 1993), whereas F2 has been positively associated with aggression, criminality, and antisocial PD (Hare, 1991; Skeem & Mulvey, 2001), recidivism (Hemphill, Hare, & Wong, 1998), substance use (Taylor & Lang, 2005), and distress (e.g., Verona, Patrick, & Joiner, 2001).[2] Lynam and colleagues (Lynam, 2002; Lynam & Derefinko,

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2006; Widiger & Lynam, 1998) have argued that the psychopathy factors can be understood via an examination of the basic personality traits that underlie each factor. Both factors share an antagonistic interpersonal approach and some degree of impulsivity (although the relation with impulsivity is stronger for F2). However, most measures of F2 are also related to negative emotionality, which typically shows little relation with measures of F1 (Lynam & Derefinko, 2006).

The PCL-R, however, is not without limitations as an assessment tool because it requires extensive training, a lengthy interview, and access to file information pertaining to official criminal records and institutional behavior, which is not typically available in noninstitutionalized populations. In response to these limitations, several self-report measures have been used to assess psychopathy in these populations. Lilienfeld and Fowler (2006) articulate several advantages (and disadvantages) to the use of self-report psychopathy instruments, including "economy," the elimination of concerns regarding interrater reliability, and the ability (of some measures) to assess for systematic response styles.

Self-report measures of psychopathy differ in the degree to which they are designed to be congruent with the PCL-R. For example, Lilienfeld (1990) developed the Psychopathic Personality Inventory (PPI) by including items derived from a variety of conceptualizations of psychopathy. Although the PPI includes eight subscales, this measure has been found to conform to a two-factor structure (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003; Lilienfeld & Widows, 2005). Additional self-report measures such as the Self-Report Psychopathy Scale (SRP; Hare, 1985), the Levenson Self-Report Psychopathy Scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995), and the Antisocial Process Screening Device (APSD; Frick & Hare, 2001) were designed to assess psychopathy, but unlike the PPI, were developed based on the PCL/PCL-R. Given the prominent role of the PCL-R, and its factor structure, in the development of these measures, they too assess psychopathy using a two-factor structure. Because of their alliance with the PCL-R structure, the first factor of these models is thought to assess core interpersonal and affective features. Alternatively, the second factor focuses on traits and behaviors related to antisocial behavior (ASB) and social deviance, including impulsivity. The LSRP's factors (i.e., primary vs. secondary) are named after a distinction put forth by Karpman (1941), who believed that there were two different types of individuals who engaged in similar behavior but as a result of different etiologies. Primary psychopaths were believed to be born with a predisposition toward callousness, whereas secondary psychopaths "behaved badly" as a result of environmental factors. Although this distinction has been the subject of increasing (and promising) empirical study of late (e.g., Skeem, Johansson, Andershed, Kerr, & Eno Louden, 2007), we refer to the LSRP factors as F1 and F2 to tie these factors into the PCL-R literature from which they were derived.

In the current study, we examine the nomological network surrounding one of these measures, the LSRP. The LSRP total score has been linked in predictable ways with ASB and substance use (Brinkley, Schmitt, Smith, & Newman, 2001; Lynam, Whiteside, & Jones, 1999), basic personality dimensions (e.g., low scores on Agreeableness, Conscientiousness; Lynam, 2002; Lynam et al., 1999; Ross, Lutz, & Bailley, 2004), alternative measures of psychopathy (Elwood, Poythress, & Douglas, 2004; Hicklin & Widiger, 2005), and passive avoidance deficits (Epstein, Poythress, & Brandon, 2006; Lynam et al., 1999). However, there have been questions surrounding the validity of the LSRP factors and their congruence with the PCL-R factors. Lilienfeld and Fowler (2006) suggested that LSRP F1 is "more highly related to measures of secondary psychopathy and ASBs than to measures of the core affective and interpersonal features of psychopathy" (p. 118). This conclusion is based on findings that (a) LSRP F1 is equally related to both PCL-R factors (Brinkley et al., 2001), (b) LSRP F1 is correlated more strongly with F2 scores from certain alternative measures of psychopathy (e.g., PPI or SRP; Lilienfeld & Hess, 2001; Wilson, Frick, & Clements, 1999), and (c) that the LSRP F1 and F2 are equally correlated with ASB (e.g., Levenson et al., 1995; McHoskey, Worzel, & Szyarto, 1998). As such, it is important to determine the nature of the LSRP factors.

To characterize the LSRP factors, we examine the interrelation of the LSRP factor scores and their relations with two sets of individual differences constructs: general personality traits and PDs. These constructs were chosen because they have consistently been included as part of the examination of convergent and discriminant validity for psychopathy measures in general (e.g., Lilienfeld & Windows, 2005), and the PCL-R specifically (Hare, 1991). We present both bivariate correlations between the LSRP scores and the external criteria, as well as correlations using residualized LSRP factors, to be methodologically

consistent with extant literature using the PCL-R (e.g., Verona et al., 2001).[3] We focus primarily on the bivariate correlations in the text, however, because partial correlations may be difficult to interpret as some have argued that "partial variables are abstractions, existing only in the statistical ether" (Miller & Lynam, 2006, p. 1472). To test the construct validity of the LSRP factors, particularly LSRP F1, we first review existing data on the relations between the psychopathy factors and these constructs (i.e., personality, PDs). We focus on the extant research that used the PCL-R to assess psychopathy because it is the largest, most comprehensive collection of empirical findings. This is not to suggest, however, that the PCL-R conceptualization of psychopathy is the only or best way to conceive of this construct.

PCL-R Factors and General Personality Traits

In a recent meta-analysis, Lynam and Derefinko (2006) examined the relations between psychopathy factors and a "consensus big four" of personality traits; of the eight studies used, four used the PCL-R. For F1, the strongest weighted effect size was for Agreeableness ($r = -.46$), followed by Conscientiousness ($r = -.22$). For F2, there were significant negative effect sizes for Conscientiousness ($r = -.45$), Agreeableness ($r = -.44$), and Extraversion ($r = -.12$), and a positive effect size for Neuroticism ($r = .34$). These authors argue that the two factors are "relatively highly correlated because of the overlap with low A (Agreeableness) but are divergent because the factors differentially assess the remaining three dimensions" (p. 147).

PCL-R Factors and PDs

Widiger (2006) notes that psychopathy has been examined most frequently with regard to Antisocial and Narcissistic PDs and that the factors appear to be differentially related to the two PDs such that Antisocial PD is more strongly linked to F2, whereas Narcissistic PD is more strongly related to F1. However, it is important to note that both PCL-R factors are typically significantly related to both PDs. In fact, the majority of studies that have examined these relations find that both PCL/PCL-R factors are significantly positively associated with all four Cluster B PDs (e.g., Antisocial, Borderline, Histrionic, and Narcissistic), as well as Paranoid PD (e.g., Blackburn & Coid, 1998; Hart, Forth, & Hare, 1991; Hart & Hare, 1989; Hildebrand & de Ruiter, 2004; Rutherford, Alterman, Cacciola, & McKay, 1997; Salekin, Rogers, & Sewell, 1997; Soderstrom, Nilsson, Sjodin, Carlstedt, & Forsman, 2005). Correlations between the PCL-R factors and these PDs show substantial variability: Paranoid (F1: range of rs: .05-.48; median r: .22; F2: range of rs: .06-.47; median r: .28), Antisocial (F1: range of rs: .24-.61; median r: .40; *F2*: range of rs: .50-.87; median r: .71), Borderline (F1: range of rs: −.03-.29; median r: .20; *F2*: range of rs: .26-.45; median r: .35), Histrionic (F1: range of rs: .09-.37; median r: .25; F2: range of rs: .13-.28; median r: .21), and Narcissistic (F1: range of rs: .08-.57; median r: .47; F2: range of rs: .24-.49; median r: .28). Based on the median correlations from previous research, one can conclude that F1 and F2 typically diverge primarily in their relations to Antisocial and Borderline PDs (higher in F2), as well as Narcissistic PD (higher in F1).

Current Study

We believe that it may be premature to draw conclusions about the (in)validity of the LSRP F1. Given the aforementioned criticisms, we focus on the personality features (traits and disorders) that underlie the LSRP factors and compare them to the known relations found for the PCL-R, because the LSRP was "designed to produce, by means of a self-report procedure, two factors similar to those produced by the Hare Psychopathy Checklist" (Levenson et al., 1995, p. 152). We examine the correlations between LSRP F1 and F2 and a comprehensive measure of general personality (i.e., the Revised NEO Personality Inventory; NEO PI-R; Costa & McCrae, 1992), expert ratings of prototypical psychopathy using the NEO PI-R data, as well as a self-report measure of the *DSM-IV* PDs and a measure of trait narcissism. Specifically, we test the following hypotheses.

First, following Lynam and Derefinko's (2006) meta-analysis, we hypothesize that LSRP F1 should be most strongly correlated with Agreeableness (negatively), followed by Conscientiousness (negatively). Alternatively, LSRP F2 should be significantly negatively related to Agreeableness and Conscientiousness (with similar effect sizes for both domains), as well as Extraversion but to a lesser degree. LSRP F2 should also manifest a significant positive relation with Neuroticism.

Second, we hypothesize that Agreeableness and, to a lesser extent, Conscientiousness will account for

the significant correlation between the two LSRP factors. We will examine the semipartial correlations between the LSRP factors in two ways, once controlling only for Agreeableness and once controlling for both Agreeableness and Conscientiousness.

Third, on the basis of previous results found for the PCL-R and PDs, we hypothesize that both LSRP factors will be correlated with Paranoid PD and the four Cluster B PDs. We expect, however, that LSRP F1 will be more strongly correlated with Narcissistic PD and trait narcissism, as well as an expert-rated measure of prototypical psychopathy, whereas LSRP F2 will be more strongly correlated with Antisocial and Borderline PDs.

Method

Participants

Participants were 271 undergraduates. Fifty-six percent of the participants were women, 86% were White, and the mean age was 19.3 years (SD = 1.3).

Procedure

Participants took part in the 1- to 2-hour experimental protocol during one session, in groups of approximately 30 individuals. After completion of informed consent, participants completed all self-report questionnaires and were debriefed by the experimenter.

Measures

Levenson Self-Report Psychopathy (LSRP) Scale. The LSRP is a 26-item self-report measure of psychopathy. Items are scored on a 1 (*Disagree Strongly*) to 4 (*Agree Strongly*) scale. In the current study, coefficient alphas for the LSRP total score (26 items), F1 (16 items), and F2 (10 items) were .83, .82, and .61, respectively. The lower alpha for *F2* is quite consistent with previous studies of this measure: Hicklin and Widiger (2005; α = .66). Lynam et al. (1999; α = .68), Miller, Lynam, Widiger, and Leukefeld (2001; α = .63), and Ross et al. (2004; α = .62).

NEO PI-R. The NEO PI-R (Costa & McCrae, 1992) is a 240-item self-report measure of the Five-Factor Model (FFM) of personality, which includes five broad domains of Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. Each of these five domains is underlaid by six facets. In the current sample, alphas for the domains ranged

from .87 to .92, whereas the facets ranged from .56 to .85 with a median of .78. These findings are consistent with those reported in the NEO PI-R manual (Costa & McCrae, 1992).

Personality Disorder Questionnaire-4+ (PDQ-4+). The PDQ-4+ (Hyler, 1994) is a 99-item self-report measure of *DSM-IV* PDs on which items are answered using a Yes or No response format. PD symptom counts were computed by summing the items endorsed for each PD. Widiger and Coker (2001) suggest that the PDQ-4+ is one of, if not the, most commonly used self-report measures of PD symptoms and that it is the most "directly coordinated with the *DSM-IV* personality disorder diagnostic criteria" (p. 412).

FFM Psychopathy Resemblance Index (PRI). The FFM PRI was calculated as an intraclass correlation between participants' obtained NEO PI-R facets scale scores and the expert generated facet profile for psychopathy, as described in Miller et al. (2001). The PRI has demonstrated significant correlations with other measures of psychopathy (Derefinko & Lynam, 2006; Miller et al., 2001) and relevant external variables such as delinquency, substance use, aggression, and risky sex (Miller & Lynam, 2003).

Narcissistic Personality Inventory (NPI). The NPI (Raskin & Terry, 1988) is a 40-item self-report measure of trait narcissism (α = .88 in the current study).

Results

Preliminary Analyses

To control for Type I error, we lowered our significance level for all analyses to $p \le .01$. We first examined whether there were gender differences in levels of psychopathy. For the LSRP total score, there was a significant difference, $t(269) = 3.35$, $p \le .01$, $d = .39$, such that men had higher scores. This difference, however, was driven by gender differences on the LSRP factors. There was no significant gender difference on *F2*, $t(269) = 1.45$, ns, $d = .19$. However, there was a significant gender difference for F1, $t(269) = 3.74$, $p \le .01$, $d = .45$, such that men had higher scores. Next, we tested whether the correlations between the LSRP factors and the external variables were statistically different across gender. All correlations were tested separately for men and women (see Cohen & Cohen, 1983, test for independent rs); of all the pairs

Table 1
Relations Between LSRP Scores and NEO PI-R Domains and Facets

	LSRP Total	LSRP Factor 1	LSRP Factor 2	LSRP Factor 1 Residual	LSRP Factor 2 Residual
Neuroticism	.31**	**.17****	**.43****	**−.03**	**.40****
Anxiety	.09	.04	.15	−.04	.15
Angry hostility	.37**	.34**	.29**	.23**	.15
Depression	.24**	**.11**	**.39****	**−.08**	**.38****
Self-consciousness	.09	**−.03**	**.26****	**−.16****	**.31****
Impulsiveness	.23**	**.14**	**.31****	**−.01**	**.28****
Vulnerability	.29**	**.14**	**.45****	**−.08**	**.44****
Extraversion	−.22**	−.17**	−.24**	−.07	−.18**
Warmth	−.37**	−.33**	−.29**	−.22**	−.15
Gregariousness	−.09	−.07	−.09	−.03	−.06
Assertiveness	−.14	**−.06**	**−.23****	**.06**	**−.23****
Activity	−.11	−.04	−.19**	.05	−.19**
Excitement-seeking	.08	.09	.04	.08	.00
Positive emotions	−.36**	−.32**	−.29**	−.21**	−.16**
Openness	.03	.00	.07	−.03	.08
Fantasy	.14	.09	.17**	.01	.15
Aesthetics	−.04	−.08	.05	−.11	.09
Feelings	−.17**	−.18**	−.08	−.16**	.00
Actions	.01	−.02	.04	−.04	.05
Ideas	.08	.08	.06	.05	.03
Values	.07	.10	−.01	.11	−.06
Agreeableness	−.62**	**−.66****	**−.32****	**−.58****	**−.01**
Trust	−.46**	−.44**	−.32**	−.33**	−.13
Straightforwardness	−.61**	**−.65****	**−.33****	**−.56****	**−.03**
Altruism	−.52**	**−.52****	**−.34****	**−.41****	**−.11**
Compliance	−.40**	−.40**	−.26**	−.32**	−.08
Modesty	−.32**	**−.43****	**−.01**	**−.48****	**.21****
Tender-mindedness	−.34**	**−.41****	**−.10**	**−.42****	**.11**
Conscientiousness	−.44**	**−.23****	**−.66****	**.08**	**−.62****
Competence	−.30**	**−.12**	**−.51****	**.13**	**−.52****
Order	−.24**	**−.07**	**−.45****	**.15**	**−.47****
Dutifulness	−.41**	**−.27****	**−.50****	**−.04**	**−.43****
Achievement striving	−.30**	**−.13**	**−.49****	**.11**	**−.49****
Self-discipline	−.37**	**−.17****	**−.59****	**.12**	**−.57****
Deliberation	−.43**	**−.31****	**−.49****	**−.09**	**−.39****
Adjusted R^2	.58**	.52**	.57**		

Note: LSRP = Levenson Self-Report Psychopathy Scale; NEO PI-R = Revised NEO Personality Inventory. Bolded pairs indicate a significant difference ($p \le .01$) exists between the two LSRP factors.
**$p \le .01$.

Bivariate Relations Between LSRP Scores and General Personality Traits

The LSRP total score was significantly positively correlated with the domain of Neuroticism and negatively with the domains of Extraversion, Agreeableness, of correlations tested, only three significant differences were found. As such, we report correlations in which men and women are combined.

and Conscientiousness (see Table 1). Examining the correlations between the LSRP factors and the NEO PI-R reveals substantive differences in the two personality profiles. The two sets of personality correlates were tested to see whether the correlations across the LSRP factors were significantly different (see Cohen & Cohen, 1983, p. 56, test for dependent rs). Of the 35 pairs of correlations, 18 were significantly different (51%; $p \le .01$). These differences are indicated in Table 1.

For Neuroticism, both LSRP F1 and F2 were significantly related at the domain level; however, the correlation between LSRP *F2* and Neuroticism was significantly stronger. The two were also equally significantly correlated with the facet score of angry hostility. However, only LSRP *F2* was correlated with the facets of depression, self-consciousness, impulsiveness, and vulnerability; these sets of correlations were significantly different across the factors.

For Extraversion, both LSRP factors were equally negatively correlated with the domain score and the facets of warmth and positive emotions. LSRP F2 was also significantly negatively correlated with facets of assertiveness and activity; only the correlations for assertiveness were significantly different across the LSRP factors.

For Openness, the LSRP factors were each significantly correlated with one facet. LSRP F1 was significantly negatively correlated with openness to feelings, whereas LSRP F2 was significantly positively correlated with openness to fantasy. Neither of these correlations was significantly different across the LSRP factors.

For Agreeableness, both factors were significantly negatively correlated with the domain score and the facets of trust, straightforwardness, altruism, and compliance. Only LSRP F1 was significantly negatively correlated with the facets of modesty and tendermindedness. All these correlations, with the exception of those for trust and compliance, were significantly different across the factors such that F1 was more strongly negatively correlated with the domain and facets.

For Conscientiousness, both LSRP factors were significantly negatively correlated with the domain score and the facets of dutifulness, self-discipline, and deliberation. LSRP F2 was also significantly negatively correlated with facets of competence, order, and achievement striving. The sets of correlations were significantly different between the LSRP factors and the domain and facets score such that LSRP F2 was more strongly negatively correlated with all facets of Conscientiousness.

Finally, we also ran three simultaneous regression analyses in which the LSRP scores were regressed on the 30 NEO PI-R facets. Examining the adjusted *R*-squared values, the facets accounted for 52% (F1), 57% (F2), and 58% (LSRP Total) of the variance.

Partial Relations Between LSRP Scores and General Personality Traits

Next, we examined the correlations between the residualized LSRP factors and the NEO PI-R domains and facets. Every significantly different correlation between a NEO PI-R score and the two LSRP factors in the bivariate correlations (e.g., Neuroticism and F1 [$r = .17$]; Neuroticism and F2 [$r = .43$]) was also significantly different using the partial correlations (e.g., Neuroticism and residualized F1 [$r = -.03$]; Neuroticism and residualized F2 [$r = .40$]). The primary differences between the bivariate and partial correlations were as follows: (a) LSRP F1 was no longer positively related to Neuroticism (except for the facet of angry hostility) or negatively related to Conscientiousness, and (b) LSRP F2 was no longer significantly negatively related to Agreeableness. Overall, the two sets of findings converge on the primary importance of low Agreeableness for LSRP F1 and high Neuroticism and low Conscientiousness for LSRP F2.

Overlap Between LSRP F1 and F2

As expected, LSRP F1 and F2 were significantly correlated, $r = .46$, $p \le .01$. Next, we examined the hypothesis that the two psychopathy factors might be related because of the shared role of Antagonism and Conscientiousness (to a lesser degree) that appear to be central to both. To examine this in the current data, we examined the semipartial correlation between LSRP F1 and F2, when controlling for the domain of Agreeableness alone and then using both Agreeableness and Conscientiousness. The semipartial correlation between LSRP F1 and F2, controlling for Agreeableness was .27, $p \le .01$. The semipartial correlation between LSRP F1 and F2, controlling for Agreeableness and Conscientiousness, was .20, $p \le .01$.

Bivariate Relations Between LSRP Scores and Personality Pathology

We examined the correlations between the LSRP total score and the *DSM-IV* PD scores obtained from the PDQ-4+. The correlations ranged from .04 (Obsessive-Compulsive PD [OCPD]) to .46 (Narcissistic PD) with a median of .30. We also examined the correlations between the LSRP total score and two other PD scores: an FFM-based PRI and NPI narcissism. The LSRP total score was positively correlated with both scores.

The correlations between LSRP F1 and the *DSM-IV* PDs ranged from −.01 (OCPD) to .47 (Narcissistic PD) with a median correlation of .24 (see Table 2). The correlations between LSRP F2 and the *DSM-IV* PDs ranged from −.11 (OCPD) to .44 (Borderline PD) with a median of .33. Overall, LSRP F1 was more strongly correlated with Narcissistic PD,

Table 2
Relations Between LSRP Scores and Personality Disorder Symptomatology

Personality Disorder	LSRP Total	LSRP Factor 1	LSRP Factor 2	LSRP Factor 1 Residual	LSRP Factor 2 Residual
Paranoid	.45**	.40**	.36**	.27**	.19**
Schizoid	.22**	.19**	.18**	.13	.10
Schizotypal	.26**	.21**	.24**	.11	.16**
Antisocial	.45**	.38**	.43**	.21**	.28**
Borderline	.38**	**.27****	**.44****	**.08**	**.36****
Histrionic	.33**	.27**	.31**	.14	.21**
Narcissistic	.46**	**.47****	**.27****	**.39****	**.06**
Avoidant	.26**	**.16****	**.34****	**.00**	**.30****
Dependent	.26**	**.16****	**.34****	**.01**	**.30****
OCPD	.04	−.01	−.11	−.07	.13
FFM psychopathy	.42**	**.47****	**.17****	**.44****	**−.05**
NPI narcissism	.22**	**.31****	**−.03**	**.47****	−.03

Note: LSRP = Levenson Self-Report Psychopathy Scale; OCPD = Obsessive Compulsive Personality Disorder; FFM = Five-Factor Model; NPI = Narcissistic Personality Inventory. Bolded pairs indicate a significant difference ($p \leq .01$) exists between the two LSRP factors.
**$p \leq .01$.

whereas LSRP F2 was more strongly correlated with Borderline, Avoidant, and Dependent PDs. It is worth noting that both factors were significantly positively correlated with all *DSM-IV* PDs with the exception of OCPD. With regard to the alternative measures of personality pathology, both LSRP factors were correlated with the FFM psychopathy score, whereas only LSRP F1 was significantly correlated with NPI narcissism. Overall, the correlations between LSRP F1 and FFM psychopathy and NPI narcissism were significantly stronger than those found for F2.

Partial Relations Between LSRP Scores and Personality Pathology

Finally, we examined the correlations between the residualized LSRP variables and the PDs (see Table 2). The significant differences found between the residualized LSRP factors and the PDs remained the same as those found for the bivariate correlations. The residualized LSRP F1 variable was significantly positively correlated with Paranoid, Antisocial, and Narcissistic PDs (as measured by the PDQ-4+ and the NPI variables), and FFM Psychopathy. Alternatively, the residualized LSRP F2 variable was significantly positively correlated with Paranoid, Schizotypal, Borderline, Histrionic, Avoidant, and Dependent PDs.

Discussion

This study examined the relations between the LSRP factors and both general personality domains

and facets, as measured by the NEO PI-R, and *DSM* and non-*DSM* PD scores. The primary goal of the study was to test the validity of these psychopathy factors, particularly LSRP F1. We chose these external variables because they have been regularly used to examine the convergent and discriminant validity of psychopathy factors from various instruments including the PCL-R. We interpret our current findings in the context of the known nomological network that surrounds the psychopathy factors, primarily as studied using the PCL/PCL-R.

Factor Interrelations

Much like the results for the PCL-R, which finds that the two factors are strongly correlated at approximately .50 (e.g., Hare, 1991), the LSRP factors were significantly interrelated ($r = .46$). This is consistent with other studies of the LSRP, which typically report a correlation between the factors that is close to .50 (e.g., .54; Epstein et al., 2006; .43; Lynam et al., 1999). We noted earlier that Lynam and colleagues (e.g., Lynam, 2002; Lynam & Derefinko, 2006) have argued that the role of Agreeableness in both psychopathy factors should explain the significant degree of overlap between measures of F1 and F2. We found some support for this in that the semipartial correlation between the LSRP factors, once Agreeableness was controlled for, was substantially smaller (i.e., $sr = .27$) than the bivariate correlation between the factors. However, there was still a significant relation between the two factors. Given Lynam and Derefinko's meta-analysis, we expected that the combination of both Agreeableness

and Conscientiousness would account for a greater percentage of the relation between the psychopathy factors. Again, a semipartial correlation controlling for these two FFM domains provided partial support as their inclusion in the analysis reduced the relation between LSRP F1 and F2 even further (i.e., $sr = .20$). However, the relation between the factors remained significant suggesting that either (a) the LSRP factors manifest overlap because of item content beyond that shared with Agreeableness and Conscientiousness or (b) the shared methodology used to assess the psychopathy factors is responsible for the remaining interrelation. We suspect that both these factors are at work in explaining why these two FFM domains do not entirely account for the relation between LSRP factors.

General Personality Correlates

Based on Lynam and Derefinko's (2006) meta-analysis, we made specific hypotheses for how the LSRP factors would relate to the FFM domains. For example, we believed that LSRP F1 would be most strongly correlated with Agreeableness, followed by Conscientiousness. Next, we hypothesized that LSRP F2 would be significantly negatively related to Agreeableness and Conscientiousness (with similar effect sizes), as well as Extraversion but to a lesser degree. We also expected LSRP F2 to manifest a significant positive relation with Neuroticism.

In general, the LSRP factors were correlated with the NEO PI-R in a manner consistent with our hypotheses. LSRP F1 was strongly negatively correlated with Agreeableness and manifested a moderate negative correlation with Conscientiousness. Alternatively, LSRP F2 was most strongly related to Conscientiousness (negatively), followed by Agreeableness (negatively) and Neuroticism (positively). The relations between the LSRP factors and the domains of Agreeableness and Conscientiousness were quite similar to those found in the Lynam and Derefinko (2006) meta-analysis. For instance, both found substantial correlations between F1 scores and Agreeableness (i.e., current study: LSRP F1, $r = -.62$; meta-analysis: weighted mean $r = -.46$) and smaller but significant correlations with Conscientiousness (i.e., current study: LSRP F1, $r = -.32$; meta-analysis: weighted mean $r = -.22$). Similarly, *F2* scores across studies were also significantly associated with Agreeableness (i.e., current study: LSRP F2, $r = -.32$; meta-analysis: weighted mean $r = -.44$) and Conscientiousness (i.e.,

current study: LSRP F2, $r = -.66$; meta-analysis: weighted mean $r = -.45$). Ultimately, the main differences between the meta-analysis and the current results were that LSRP F1 was significantly positively related to Neuroticism ($r = .17$ vs. a weighted mean r of .01 in the meta-analysis) and negatively related to Extraversion ($r = -.17$ vs. a weighted mean r of .00 in the meta-analysis). However, the facet-level analyses are helpful in interpreting the domain-level analyses and understanding why these findings diverge from the aforementioned meta-analysis. For instance, although the Neuroticism domain was significantly correlated with LSRP F1, this relation was driven primarily by the angry hostility facet as the other five Neuroticism facets were unrelated to F1 (in fact, Neuroticism was not significantly related to LSRP F1, if the angry hostility facet was removed; $r = .10$). This is not surprising because experts rated this trait as being somewhat elevated in prototypically psychopathic individuals (Miller et al., 2001). However, one does not see evidence of a significant negative relation between LSRP F1 and the experience of negative emotions, as one might expect based on Cleckley's (1941) conceptualization of psychopathy. The role of the PCL-R in the derivation of the LSRP may partially explain this finding. Although the PCL/PCL-R was largely based on Cleckley's conceptualization, Hare did not include low anxiety/distress as one of the criteria. As a result, subsequent measures such as the LSRP do not include specific content aimed at capturing traits related to fearlessness and low anxiety. In addition, the correlations between the residualized LSRP F1 and the Neuroticism domain and facets suggest that the relations between LSRP F1 and negative affectivity largely work as one might expect (on the basis of work with the PCL-R), if one controls for the negative emotionality that is an important component of LSRP F2.

The findings for LSRP F1 and Extraversion also diverge from what one might expect on the basis of the Lynam and Derefinko (2006) meta-analysis. However, a facet-level analysis suggests that this finding was due primarily to two significant facets: warmth and positive emotions. Although negative relations with these two traits are consistent with previous conceptualizations of psychopathy (see Widiger & Lynam, 1998), the overall finding does not, however, explain the lack of a significant relation between F1 and Extraversion facets such as assertiveness. Although neither the PCL/PCL-R nor Cleckley's conceptualization explicitly includes a trait of this

type, one does typically find a relation between dominance and dominance-related psychopathology (i.e., narcissism) and F1 scores of psychopathy (e.g., Kosson, Steuerwald, Forth, & Kirkhart, 1997). The lack of a significant negative correlation between LSRP and self-consciousness (a trait that may help explain the glib, superficial charm; Widiger & Lynam, 1998) and a positive correlation with assertiveness suggests that the LSRP F1 is not capturing some of the "smooth," charming, and dominant characteristics thought to be an integral aspect of psychopathy in general, and F1 specifically (e.g., Kosson et al., 1997; Zolondek, Lilienfeld, Patrick, & Fowler, 2006). These specific interpersonal behaviors appear to be based on the traits of high dominance and low anxiety, which are not well captured by the LSRP F1. However, it is worth noting that this may be a general limitation of self-report psychopathy measures; that is, none of the self-report measures appear to capture the entirety of the interpersonal traits associated with F1. For instance, although PPI F1 includes dominance (in the form of a Social Potency scale), it fails to capture the antagonistic interpersonal approach that is common to this factor (e.g., Benning, Patrick, Salekin, & Leistico, 2005; Derefinko & Lynam, 2006).

PD Correlates

The LSRP factors also diverge in their relation to other PDs. As expected, both LSRP factors were significantly correlated with Paranoid PD, along with all the Cluster B PDs. However, perhaps because of issues relating to common method variance, both LSRP factors were correlated with the majority of *DSM-IV* PDs (with the exception of OCPD). There were differences in the strengths of these relations across the psychopathy factors. For instance, as expected, F1 was more strongly related to Narcissistic PD, whereas F2 was more strongly related to Borderline PD. In addition, F1 was more strongly positively related to alternative, validated measures of psychopathy and narcissism (i.e., FFM psychopathy, and NPI narcissism). Consistent with the findings based on the NEO PI-R, LSRP F2 appears to capture a broader construct associated with increased negative affect and emotional dysregulation, antagonism, and impulse control problems, whereas F1 demonstrates a more specific pattern, in which it is primarily linked with disorders that share an antagonistic core of traits (e.g., Antisocial, Narcissistic, prototypical psychopathy). These findings are generally consistent with

those found for the PCL-R. As noted earlier, although both factors are typically correlated with all the Cluster B PDs, Antisocial and Borderline PD are usually more strongly related to PCL-R F2, and Narcissistic PD is usually more strongly related to PCL-R F1 (e.g., Blackburn & Coid, 1998; Hart et al., 1991; Hart & Hare, 1989; Hildebrand & de Ruiter, 2004; Rutherford et al., 1997; Salekin et al., 1997; Soderstrom et al., 2005).

Unlike the PCL-R factors, however, both LSRP factors demonstrated a wider array of significant correlates with the PDs, including non–Cluster B PDs. Although this is not surprising for F2 because of the significant role of neuroticism in LSRP F2 and almost all the PDs (e.g., see Saulsman & Page, 2004, for a review), it is more surprising for LSRP F1. This may be because of the fact that LSRP F1 appears to include more negative affectivity than one might expect for this factor. Even a small degree of neuroticism in a construct (e.g., LSRP F1) is likely to result in significant correlations with PDs such as Avoidant and Dependent, which are heavily laden with neuroticism (see Lynam & Widiger, 2001). Regardless of the explanation, these findings are incongruent with previous research examining the relations between the PCL/PCL-R and the PDs and are problematic for the current LSRP F1 scale.

Does the LSRP F1 Measure the Interpersonal and Affective Aspects of Psychopathy?

As noted earlier, the LSRP F1 has been criticized for being more strongly related to "measures of secondary psychopathy and ASB than to measures of the core affective and interpersonal features of psychopathy" (Lilienfeld & Fowler, 2006, p. 118). We feel that the present results are not entirely consistent with this criticism. These core features, as assessed by the PCL-R, include items such as glibness/superficial charm, grandiose sense of self-worth, pathological lying, conning/manipulative, lack of remorse/guilt, shallow affect, callousness/lack of empathy, and failure to accept responsibility for actions. Widiger and Lynam (1998) translated each of these PCL-R items into their underlying FFM traits and argued that almost all of these core traits of PCL-R F1 could be translated into Agreeableness facets. Given this, the strong correlation between LSRP F1 and Agreeableness ($r = -.66$) suggests that the LSRP F1 is capturing a substantial component of the core interpersonal and affective

components of psychopathy. Consistent with this notion were the significant relations observed between LSRP F1 and indices of narcissism and prototypical psychopathy based on the FFM. It is worth noting, however, that the LSRP F1 does not appear to assess certain interpersonal and affective traits as well as one might expect to see; that is, traits related to being glib and superficially charming (PCL-R Item 1) and interpersonally dominant do not appear to be captured by the LSRP F1 scale. Although the LSRP captures the callous, cold, immodest, and deceitful style that is consistent with F1, it appears to miss some of the other traditional features of this psychopathy factor.

In general, the current relations between the LSRP factors and general personality traits are quite consistent with results observed in previous studies (e.g., Lynam, 2002; Ross et al., 2004). The current findings, paired with extant research, suggest that the LSRP F1 captures many of the important traits associated with PCL-R F1 (e.g., grandiosity, callousness, manipulativeness), misses some traits (e.g., glib/superficial charm, dominance), and includes some that should not be included (i.e., related to negative emotionality). It is our opinion that some of the problems with the LSRP F1 that were identified by Lilienfeld and Fowler (2006) require further scrutiny. Although not directly addressed here, these issues deserve comment. As noted earlier, the criticism of the LSRP F1 appears to be based on three observations: (a) LSRP F1 is equally related to both PCL-R factors (Brinkley et al., 2001), (b) LSRP F1 is correlated more strongly with F2 scores from certain measures of psychopathy (e.g., PPI or SRP; Lilienfeld & Hess, 2001; Wilson et al., 1999), and (c) the LSRP F1 and F2 are equally correlated with ASB. Although each of these criticisms has some merit, we do not believe they invalidate the LSRP scales. We address these points further below.

The first observation that the LSRP F1 correlates equally strongly with both PCL-R factors (Brinkley et al., 2001) appears to be a general shortcoming of self-report measures of psychopathy. For instance, Berardino, Meloy, Sherman, and Jacobs (2005) found that PPI F1 was equally correlated with both PCL-R F1 (r = .38) and PCL-R F2 (r = .32). Similarly, Poythress, Edens, and Lilienfeld (1998) presented data indicating that the eight PPI scales do not correlate with the PCL-R factors in a manner that suggests that the PPI factors are convergent with the PCL-R factors. Specifically, none of the eight PPI factors manifested significantly different correlations with the PCL-R factors. Finally, Zolondek et al. (2006) found only small-to-moderate convergent correlations between PPI factors and PCL-R factors (i.e., rs of .25 and .37) and found only partial support for the discriminant validity of such factors. It appears that self-report psychopathy measures, while correlating significantly with the PCL-R total scores, do not show substantial convergent or discriminant validity with the PCL-R factors.

The second observation is that the LSRP F1 correlates more strongly with F2 scores than F1 scores from other self-report psychopathy measures (e.g., PPI, SRP, APSD; e.g., Lilienfeld & Hess, 2001; Wilson et al., 1999). Although this may be true, it ignores the possibility that these alternative measures of psychopathy are assessing F1 in a manner that is not entirely consistent with the traditional F1 construct. For example, although LSRP F1 and PCL-R F1 are significantly related to an antagonistic interpersonal orientation (e.g., Skeem, Miller, Mulvey, Tiemann, & Monahan, 2005), the PPI and SRP assess much less of this trait. For instance, the F1 scores for both the PPI and SRP demonstrate much smaller correlations with Agreeableness (rs = –.13 and –.11, respectively; Benning, Patrick, Salekin, et al., 2005; rs = –.19 and –.26, respectively; Derefinko & Lynam, 2006). The F1 scores for the PPI and SRP also demonstrate a different pattern of relations with regard to Neuroticism (both are strongly negatively correlated) and Extraversion (both are significantly positively correlated) that is not found with the PCL-R (e.g., Skeem et al., 2005). Finally, F1 and F2 in the PPI and SRP are largely uncorrelated, whereas the PCL-R factors are strongly correlated with one another. The lack of convergence between LSRP F1 and the F1 scores of other measures may reflect basic differences in the salience of traits such as Agreeableness, Neuroticism, and Extraversion. Overall, one could argue that these other self-report measures of F1 psychopathy are performing in a manner (e.g., relations to Agreeableness) that is inconsistent with the traits thought to be core to this factor such as callousness, grandiosity, pathological lying, and engaging in conning/manipulative behavior.

The final criticism is that both factors of the LSRP are equally correlated with ASB (e.g., Lynam et al., 1999; McHoskey et al., 1998). Although both PCL-R factors are typically correlated with ASB (e.g., Patrick, Hicks, Krueger, & Lang, 2005), the PCL-R F2 is usually the stronger unique correlate (e.g., Patrick et al., 2005; Skeem & Mulvey, 2001).

However, this disparity might be due, in part, to overlap in predictor-criterion content. That is, the PCL-R F2 may be the stronger correlate because of the inclusion of items that explicitly reference previous ASB, which are scored as part of F2. Removing these items, as Cooke and Michie (2001) suggest, may well result in PCL-R factors that are more equivalent in their relations with ASB (see Hall, Benning, & Patrick, 2004). In addition, an equal correlation between both LSRP factors and ASB might be preferable to the pattern found for other self-report psychopathy measures. For instance, the PPI F1 is unrelated to aggression (Patrick, Edens, Poythress, Lilienfeld, & Benning, 2006), unrelated or negatively related to substance use (Benning et al., 2003; Benning, Patrick, Blonigen, Hicks, & Iacono, 2005; Patrick et al., 2006), and unrelated or weakly related to ASB (Benning et al., 2003; Benning, Patrick, Blonigen, et al., 2005; Patrick et al., 2006). Given that F1 scores are supposed to assess the core affective and interpersonal traits of psychopathy (e.g., grandiosity, manipulativeness, lack of empathy/remorse, failure to accept responsibility), one would expect these scores to demonstrate some relation with externalizing problems. Alternative measures of these interpersonal aspects of psychopathy, such as the Interpersonal Measure of Psychopathy (Kosson et al., 1997), do show significant relations with ASB (Kosson et al., 1997; Zolondek et al., 2006). As such, we do not believe it is particularly problematic for both the LSRP factors to relate to antisocial, externalizing behaviors.

Limitations

In the current study, our assessment of psychopathy and personality (general traits and PDs) were based solely on self-reports. Future research would do well to examine these issues using other alternative methodologies such as a semistructured interview for the assessment of the PDs and psychopathy and/or data derived from objective behavioral tasks. The reliance on self-report measures may have inflated the current correlations because of the shared method variance. In addition, the current data were entirely cross-sectional. As such, we were not able to assess the predictive validity of the LSRP factors; this is an important task for future research because the PCL-R has proven to be a relatively consistent predictor of problematic outcomes (Gretton et al., 2004; cf. Guy, Edens, Anthony & Douglas, 2005).

Another limitation of the current study is that we tested only one of the primary self-report measures of psychopathy, the LSRP, rather than including multiple specific measures of psychopathy such as the PPI, SRP, and/or the APSD. However, the current results help fill a void in the literature by placing the LSRP and its factors in context with regard to other frequently used psychopathy instruments. We feel the current results have helped clarify the manner in which the LSRP factors relate to important external criteria and how these patterns converge and diverge with the patterns demonstrated by the PCL-R and other measures of psychopathy.

Finally, the current results are derived from undergraduate students. Although the LSRP was designed for use in noninstitutionalized samples, our results would have been stronger if they had included data from a community sample that may have been more diverse with regard to demographics and levels of personality pathology.

Conclusions

Overall, our results are quite consistent with those put forth by both Benning, Patrick, Salekin, et al. (2005) and Derefinko and Lynam (2006) in suggesting that the "factor 1" scores on various self-report psychopathy measures appear to be assessing constructs that diverge in important, substantive ways. We agree with the concerns raised by Derefinko and Lynam suggesting that "researchers must acknowledge the factors are not isomorphic, that results from one instrument may not generalize, and to be specific about which factor 1 they are examining" (p. 278). However, we believe that criticisms levied against the LSRP F1 may have been overstated. Although the LSRP F1 may not capture all traits found in PCL-R F1 psychopathy (e.g., glib/superficial charm; dominance), it appears to capture successfully a number of other traits that are central to the construct (e.g., grandiosity, callousness, selfishness, and manipulativeness). In fact, we argue that it captures the antagonistic aspects of this part of psychopathy as well or better than other existing self-report measures. Modifying the scale would be necessary, however, if one wanted to increase its fidelity with PCL-R F1 or other conceptualizations of primary psychopathy. This could be accomplished by increasing its loading on agentic aspects of extraversion and decreasing its relation with negative emotionality.

Overall, it is clear that further construct validation and explication is necessary for all the self-report psychopathy instruments to derive a consensus about the

traits that are considered central to a measure of this aspect of psychopathy. The lack of empirical convergence between existing measures of F1, as well as theoretical divergence with classic descriptions of psychopathy (e.g., Cleckley), suggests that further refinement is necessary. As a field, we must determine which basic traits are central to psychopathy; this would enable an explicit comparison of the different psychopathy measures to an a priori personality profile to see which shows the greatest fidelity to the construct.

Notes

1. More recent factor analyses of the Psychopathy Checklist-Revised (PCL-R) have resulted in either a three- (Cooke & Michie, 2001) or four-factor model (e.g., Hare, 2003). Both these models divide the "old" Factor 1 (F1) into two facets (e.g., Interpersonal, Affective). The third factor (e.g., Impulsive, Irresponsible Lifestyle) in the three-factor model is made up of the traits and behaviors from the "old" Factor 2 (F2) but does not include the explicitly antisocial items. Alternatively, the four-factor model divides the old *F2* into two facets (e.g., Lifestyle; Antisocial), one of which includes antisocial behavior (ASB). Despite these changes in proposed factor structures for the PCL-R, most self-report measures of psychopathy still result in a two-factor solution that is akin to the initial factor structure of the PCL and PCL-R.

2. It should be noted, however, that the degree of divergence found for the PCL-R factors with external correlates is often increased through the use of statistical methods such as partial correlations or simultaneous regression analyses, in which the authors control for the substantial overlap between the PCL-R factors. As a result, the PCL-R factors often demonstrate more divergent relations than would be found if bivariate correlational analyses were used (see Lynam, Hoyle, & Newman, 2006).

3. Two residualized variables were created to examine the unique effects of Levenson Self-Report Psychopathy Scale (LSRP) F1 and F2. Specifically, each LSRP score was regressed onto the other and the residuals were saved. Residualized F1 represents that part of F1 that cannot be predicted from F2; residualized F2 represents that part of F2 that cannot be predicted from F1. Although correlations with these variables represent semipartial correlations, the procedure is generically referred to as partialling, which we use here.

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